

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To: PAUL J. FORDENBACHER GANZ LAW, P.C. P.O. BOX 10105 PORTLAND, OR 97296
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Date of mailing (day/month/year) <b>19 OCT 2004</b>
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Applicant's or agent's file reference		
APT-2.005PCT		
<b>FOR FURTHER ACTION</b>		
See paragraph 2 below		
International application No.	International filing date (day/month/year)	Priority date (day/month/year)
PCT/US04/20590	25 June 2004 (25.06.2004)	25 June 2003 (25.06.2003)
International Patent Classification (IPC) or both national classification and IPC		
IPC(7): F02B 25/08 and US Cl.: 123/51B, 51BC, 51R, 51BD, 55.7		
Applicant		
HOFBAUER, PETER		

1. This opinion contains indications relating to the following items:

- ☒ Box No. I      Basis of the opinion
- ☐ Box No. II      Priority
- ☐ Box No. III      Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV      Lack of unity of invention
- ☒ Box No. V      Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI      Certain documents cited
- ☒ Box No. VII      Certain defects in the international application
- ☐ Box No. VIII      Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer  Tony Argenbright Telephone No. (703) 308-0861
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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/20590

**Box No. I Basis of this opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No. .  
PCT/US04/20590

**Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims <u>1-5,8-12,15-25</u>	YES
	Claims <u>6,7,13,14</u>	NO
Inventive step (IS)	Claims <u>1-5,8-12,15-25</u>	YES
	Claims <u>6,7,13,14</u>	NO
Industrial applicability (IA)	Claims <u>1-25</u>	YES
	Claims <u>NONE</u>	NO

**2. Citations and explanations:**

Claims 1-5,8-12,15-25 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a scavenge pump associated with each cylinder, the scavenge pump comprising a first scavenging chamber and a second scavenging chamber, the first scavenging chamber defined by an end of the housing and a plunger linked to one of the opposed pistons distal from the crankshaft, wherein the plunger is adapted to move in unison with the piston and to draw in a fluid from outside the housing and to expel fluid to the second scavenging chamber, the second scavenging chamber adapted to expel fluid into the combustion chamber through the intake ports.

Claims 6,7,13,14 lacks novelty under PCT Article 33(2) as being anticipated by Hofbauer (US 6,170,443). Hofbauer discloses an internal combustion engine comprising: at least two opposed cylinders (100, 200), each comprising one pair of opposed pistons reciprocating along a common axis, and an end of each opposed piston, in conjunction with a cylinder, defining a combustion chamber, and a crankshaft (300) having at least one journal coupled to at least one pullrod (411, 421) and at least one pushrod (412, 422) for a pair of opposed pistons; wherein the one pair of opposed pistons comprises a first inner piston and a second inner piston, each inner piston linked to a push rod at one end and each push rod at a second end engaged to the one journal.

Claims 1-25 meets the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

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**WRITTEN OPINION OF THE  
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International application No.

PCT/US04/20590

**Box No. VII Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

Claim 11 objected to under PCT Rule 66.2(a)(iii) as containing the following defect(s) in the form or contents thereof: "so that so that" should read "so that".

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